

LISTING OF CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Original) A directional, ultrasonic transceiver for pets comprising:

an ultrasonic transmitter means for creating an ultrasonic signal within an elongated ultrasonic field envelope, said transmitter means possessing sound shaping means for further augmenting said ultrasonic field envelope to a more beam-like profile;

an ultrasonic receiver means for wearing by a pet for the detection of said ultrasonic signal within said elongated ultrasonic field envelope, said receiver means possessing means for delivering a sensory stimulus to said animal upon reception of said ultrasonic signal.

2. (Original) A directional ultrasonic pet detection system comprising:

a transmitter means for wearing by a pet, said transmitter means having a directional ultrasonic output, said ultrasonic output emitted in a direction downward toward the ground directly in front of said pet and bounced forwardly in the direction in which said pet is facing;

directional receiver means for detecting said forwardly bounced ultrasonic output, only when said pet is facing said receiver means;

means for converting said detected ultrasonic output to an electric voltage output for the activation of remote controlled apparatus for pets.

3. (Original) A directional, ultrasonic transceiver for pets comprising:

an ultrasonic transmitter means, for creating an ultrasonic signal within an ultrasonic field envelope, said ultrasonic transmitter means possessing modulation means for the creation of one or more modulation codes in said ultrasonic signal, said modulation codes being selectively transmitted;

an ultrasonic receiver means for detection of said ultrasonic signal within said ultrasonic field envelope, said ultrasonic receiver means possessing demodulation means to differentiate between said modulation codes and means for converting the said ultrasonic signal to one or more electric voltage outputs, the output selected depending upon the particular modulation code received, for the activation of various remote controlled apparatus for pets.

4. (Original) A directional, ultrasonic transceiver for pets comprising:

an ultrasonic transmitter means, for creating an ultrasonic signal within an ultrasonic field envelope, the output of said ultrasonic transmitter means comprising a series of ultrasound bursts having a predetermined pulse duration, said bursts being emitted at a predetermined rate of bursts per unit time;

an ultrasonic receiver means for detection of said ultrasonic signal within said ultrasonic envelope; said ultrasonic receiver means employing a method of rejecting environmental noise and surface reflections of the bursts by sensing the low to high transition of a first received burst then rejecting any low to high transition of a next received burst which does not occur within a predetermined, narrow window of time and further rejecting said low to high transition of said next received burst if it is not approximately equal in peak amplitude to said low to high transition of said first received burst, said receiver means further measuring the time duration between said first and next received bursts and activating an electric voltage output means, for the operation of remote controlled apparatus for pets, only when a predetermined number

of bursts have been received and accepted at said predetermined rate of bursts per unit time.

5. (Original) A directional ultrasonic detection system to chase pets out of restricted areas comprising:

transmitter means for wearing around the neck of a domestic animal, said transmitter means having a directional ultrasonic output, said output downwardly pointed toward the ground directly in front of said domestic animal and bounced forwardly in the direction in which said animal is facing;

directional receiver means for detecting said ultrasonic output only when said animal forwardly approaches said receiver means on a proximate line of sight path;

means for creating a sensory stimulus at said receiver means for training said domestic animal to retreat from said receiver means upon said detection.

6. (Original) The invention of claim 5 wherein said sensory stimulus is a visible light ray.

7. (Original) The invention of claim 5 wherein said sensory stimulus is a sonic alarm.

8. (Original) A self opening and closing pet door to automatically open in the presence of an ultrasonic signal and automatically close in the absence of said signal comprising;

a transmitter means for wearing by a pet, said transmitter means having a directional ultrasonic output, said ultrasonic output emitted in a direction downward toward the ground directly in front of said pet, and bounced forwardly in the direction in which said pet is facing;

directional receiver means for detecting said forwardly bounced ultrasonic output, only when said pet is facing said receiver means;

means for converting said detected ultrasonic output to an electric voltage output;

a casing with opening to allow a domestic animal to pass from one side of said casing to another;

a movable panel normally placed within said opening to obstruct the path of the animal through said casing;

means for moving said movable panel out of said opening in said door casing upon reception of the transmitted ultrasonic signal by said ultrasonic receiver means;

means for guiding said movable panel along its path;

means for attaching said casing to a wall or door of a building structure.

9. (Original) The invention of claim 8 wherein, said receiver means possesses means to effectively control the distance from the domestic animal at which said receiver means detects said ultrasonic output.

10. (Original) The invention of claim 8 wherein the means to move said movable panel comprises an electric motor;

a spool attached to the shaft of said electric motor;

a cable, one end of which is attached to said spool, the other of which is attached to said movable panel for the purpose of raising said movable panel as said cable winds around said spool as said spool rotates with the shaft of said electric motor.

11. (Original) The invention of claim 10 wherein, return of said movable panel to its normal position within the opening of said casing is automatically accomplished by

the force of gravity once said electric motor is deactivated in the absence of reception of said ultrasonic output by said receiver means.

12. (Original) A directional, ultrasonic area restriction system for animals comprising:

an ultrasonic transmitter means and sound shaping means, for creating an ultrasonic signal within an elongated ultrasonic field envelope, said ultrasonic field envelope having an outermost boundary, said outermost boundary having its length several times greater than its width;

ultrasonic receiver means for wearing by an animal, said receiver means for detection of said ultrasonic signal when said animal, approaching from outside of said ultrasonic field envelope, crosses said outermost boundary;

means for creating a sensory stimulus to said animal upon reception of said ultrasonic signal by said receiver means, said sensory stimulus being for the purpose of training the animal to avoid crossing said outermost boundary of said ultrasonic field envelope.

13. (Original) The invention of claim 12 further comprising, means for attaching said ultrasonic transmitter means to a positioning post to be placed in the ground.

14. (Original) The invention of claim 12 wherein, the transmitter means alternately generates two separate modulated signals to define two independent boundaries, the receiver means thereby independently activating a warning tone output and a shock output depending upon which modulated signal is received.

15. (Original) The invention of claim 12 further comprising a variable gain control at said transmitter means to effectively control the size of said ultrasonic field envelope.

16. (Original) The invention of claim 12 wherein, said sensory stimulus comprises a sonic alarm.

17. (Original) The invention of claim 12 wherein said sensory stimulus comprises an electric shock.

18. (Original) The invention of claim 12 wherein said sensory stimulus comprises a warning tone followed by an electric shock.

19. (Original) The invention of claim 12 wherein, said ultrasonic field envelope approximates a beam transmitted along the perimeter of an area to restrict animals to roaming within said perimeter and further comprising a pair of said transmitter means attached a positioning post to be placed in the ground to establish one corner of the restrictive perimeter.

20. (Original) The invention of claim 19 wherein, said pair of transmitter means are mounted within casings and allowed to rotate relative to one another to adjust the angle of said corner.

21-35. (Canceled)

36. (Currently Amended) An automatic pet door comprising:
a casing defining a door opening;

a panel movably connected to said casing within said door opening;
a motor attached to said casing;
a cable having a first cable end attached to said motor and having a second cable end attached to said panel; ~~and~~
a signaling means worn by a pet, said motor selectively moving said panel to open said door in response to said signaling means;
said motor having a rotatable drive shaft to which a spool is attached wherein said first cable end is attached to said spool so that said cable is wound around said spool during operation of said motor;
a locking pin releasably connected to said panel and having an attachment end and a free end, said second cable end being attached to said attachment end of said locking pin; and
said casing including a locking pin hole and further comprising a means for biasing said free end into said locking pin hole, said biasing means being attached to said panel.

37-39. (Canceled)

40. (Currently Amended) The door of claim 37 36 further comprising an pulley attached to said panel, said second cable end being threaded through said pulley and being attached to said attachment end of said locking pin.

41. (Currently Amended) The door of claim 39 36 wherein said door is in an open position when a predetermined length of said cable is wound around said spool, and said locking pin is disengaged from said locking pin hole.

42. (Previously Reinstated) The door of claim 41 wherein said door has a closed position when said predetermined length of said cable is unwound from said spool and said locking pin is in said locking pin hole.

43. (Previously Reinstated) The door of claim 42 wherein said panel moves from said open position to said closed position within said door opening by the force of gravity when said motor is deactivated.

44. (Currently Amended) A pet door comprising:

a panel;

a casing defining a door opening, said panel being slidably mounted to said casing for movement within said door opening;

a drive means for selectively moving said panel; and said drive means including a motor attached to said casing and a cable having a first cable end attached to said motor and a second cable end attached to said panel;

a transmitter means attached to a pet, which activates said drive means only when said pet is facing said door;

a locking pin movably connected to said panel and having an attachment end and a free end, said second cable end being attached to said attachment end; and

said casing including a locking pin hole with said free end being insertable into said locking pin hole, said locking pin including a biasing means for urging said free end into said locking pin hole.

45-47. (Canceled)

48. (Currently Amended) The door of claim ~~47~~ 44 wherein said motor has a drive shaft to which a spool is attached wherein said door is in an open position when a

predetermined length of said cable is substantially wound around said spool and said locking pin is disengaged from said locking pin hole.

49. (Currently Amended) The door of claim ~~47~~ 44 wherein said door has a closed position when said predetermined length of said cable is unwound from said spool and said locking pin extends into said locking pin hole.

50. (Currently Amended) The door of claim ~~49~~ 44 wherein said transmitter means emits a directional ultrasonic output in a forward direction and a downward direction from said pet and further comprising a receiving means electrically connected to said motor for receiving said directional ultrasonic output.